

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
17 July 2003 (17.07.2003)

PCT

(10) International Publication Number  
**WO 03/057739 A1**

- (51) International Patent Classification<sup>7</sup>: **C08F 2/44**,  
C08K 3/22 3150 (AU). **ADAMS, Beryn, John** [NZ/AU]; 6/28 Harold Street, Hawthorn East, Victoria 3123 (AU).
- (21) International Application Number: PCT/AU03/00015 (74) Agents: **ROBERTS, Mark, Kemball** et al.; Davies Collision Cave, 1 Little Collins Street, Melbourne, Victoria 3000 (AU).
- (22) International Filing Date: 8 January 2003 (08.01.2003)
- (25) Filing Language: English (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (26) Publication Language: English
- (30) Priority Data:  
PR 9878 8 January 2002 (08.01.2002) AU (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicants (*for all designated States except US*): **COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION** [AU/AU]; Limestone Avenue, Campbell, Australian Capital Territory 2612 (AU). **ORICA AUSTRALIA PTY LTD** [AU/AU]; 1 Nicholson Street, Melbourne, Victoria 3000 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **ELDRIDGE, Robert, James** [AU/AU]; 20 Heath Street, Glen Waverley, Victoria 3150 (AU). **NORRET, Marck** [DK/DK]; Strandagervej 22, DK-7000 Fredericia (DK). **DAHLKE, Thomas, W.** [DE/DE]; Beroldingerweg 9, 79194 Gundelfingen (DE). **BALLARD, Mathew, John** [AU/AU]; 12 Stableford Avenue, Glen Waverley, Victoria

## Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COMPLEXING RESINS AND METHOD FOR PREPARATION THEREOF

(57) Abstract: The invention provides a process for preparing polymeric beads of complexing resin incorporating magnetic particles, which process comprises: producing a dispersion having a continuous aqueous phase and a dispersed organic phase, said organic phase comprising one or more polymerisable monomers, magnetic particles and a dispersing agent for dispersing said magnetic particles in the organic phase; polymerising said one or more polymerisable monomers to form polymeric beads incorporating said magnetic particles, wherein said polymeric beads include amine groups capable of complexing a transition metal cation, or wherein said polymeric beads are reacted with one or more compounds to provide amine groups capable of complexing a transition metal cation, complexing resins prepared by this process, and polymeric beads of complexing resin comprising a polymer matrix having magnetic particles dispersed substantially uniformly therein, wherein the polymer matrix incorporates amine groups capable of complexing a transition metal cation.